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Robertson

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[54] **APPARATUS AND METHOD FOR RECORDING JAW MOTION**

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[58] **Field of Search** 433/68, 69, 215

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[57] **ABSTRACT**

A method and apparatus for tracking, recording and analyzing a subject's jaw motion is provided. Cross-haired targets are non-intrusively fixed in relation to the subject's upper and lower jaws. Three video cameras are disposed about the subject's head, each camera lens being focused on the targets. Each video camera is equipped with a charge control device chip which includes an array of light sensitive pixels defining a two dimensional image coordinate system. The charge control device chip converts a light image indicative of a target's cross-hair position into a series of amplitude signals. A computer is used to receive, process and display said camera chip amplitude signals. The computer includes a pre-processor board for timing, synchronizing and transforming said camera chip amplitude signals into address record information representing the targets' relative positions as a function of time. The computer also has a mass storage unit for storing address record information, graphics software for creating a simulation of the subject's jaw movement in the subject coordinate system based on the address record information, and a display for visually presenting the simulation produced by the graphics software. The method and apparatus are useful for understanding orofacial pain, fabricating prosthesis, analyzing temporomandibular joint dysfunction pathology and orthodontic and occlusion problems.

7 Claims, 8 Drawing Sheets